International Journal of Physics
and Research (IJPR)
ISSN(P): 2250-0030; ISSN(E): 2319-4499
Vol. 4, Issue 4, Aug 2014, 1-2

THE EXPANSION OF UNIVERSE

VAIBHAV RAMESH THOOL

Department of Petrochemical Engineering, Dr. Babasaheb Ambedkar Technological University, Maharashtra, India

ABSTRACT

This paper explains the pattern how universe works and it expands. It also explains what is the role of black hole and how it functions. How the law of conservation of mass and energy balances the universe and how it may die.

KEYWORDS: Universe, Black Hole, Loop Quantum Gravity, Portal, Conservation, Death

INTRODUCTION

According to Einstein's Theory of Relativity, black holes (at least the staticones), do exist in space. Applying these black holes to time travel, though, seem to be impossible currently because of his Theory of Relativity, as well as the principles of the speed of light. The Theory of Relativity states that a particle (that has rest mass) with a subluminal velocity needs infinite energy to accelerate to the speed of light. However, to allow for time travel, one would have to be travelling faster than the speed of light, which is currently impossible (Bonsor and Lamb)

A new theory is based on a concept known as 'loop quantum gravity' (or LQG). It was first formulated as a way of merging standard quantum mechanics and standard general relativity, in order to remedy incompatibilities between the twofields. Basically, LQG proposes that space time is granular, or atomic, in nature; It is made up of miniscule, indivisible chunks about the same size as the Planck length — which roughly amounts to 10^{-35}meters in size.

Researchers Jorge Pullinfrom Lousiana State University, and Rodolfo Gambinifrom the University of the Republic in Montevideo, Uruguay, crunched the numbers to see what would happen inside a black hole under the parameters of LQG. What they found was far different from what happens according to general relativity alone: there was no singularity. Instead, just as the black hole began to squeeze tight, it suddenly loosenedits grip again, as if a door was being opened.

It might help to conceptualize exactly what this means if you imagine yourself traveling into a black hole. Under general relativity, falling into a black hole is, in someways, much like falling into a very deep pit that has a bottom, only instead of hitting the bottom, you get pressed into a single point — a singularity — of infinite density. With both the deep pit and the black hole, there is no "otherside." The bottom stops your fall through the pit, and the singularity "stops" your fall through the black hole (or at least, at the singularity it no longer makes sense to say you're "falling").

Your experience would be much different traveling into a black hole according to LQG, however. At first you might not notice the difference: gravity would increase rapidly. But just as you were nearing what ought to be the black hole'score — just as you're expecting to besquashed into the singularity — gravity would instead begin to decrease. It would be as if you were swallowed, only to bespit out on the otherside.

In otherwords, LQG black holes are less likeholes and more like tunnels, or passage ways. They could be shortcuts to other parts of our universe. Or they could be portals to other universe sentirely.

But this is the just the part of the theory more justification is given on the expansion of the universe. Black hole is considered as a portal which is transferring matter and energy from a universe of higher potential to lower one. That means there is another universe of higher potential.

How the universe works, from where it gains energy is also justified below. First the potential difference produces a drag which drags the matter from one universe to another. As black hole is considered to beconverging place, matter rushes out of it; leading to friction and thus the generation of large amount of heat. This energy is used in the expansion of the universe.

Also the randomness can be justified. As space is a vacuum, that means no friction; therefore the drag produce due to the potential difference accelerates the matter passing through the portal with a velocity equal or greater than the speed of light and as there is no friction in spaceit moves infinitely until stopped by any other external force.

So the question arises where is this is going to end. The answer is when the potential of the universes will become equal which will take infinite time. Also, there has been a question like how a black hole will die, according to do this theory it will not since it's just a portal use to equalize the potential of the universes. When all the balance is achieved which will take million and trillions of years, the universe will cool down and eventually leading to the death of universe.

CONCLUSIONS

Our universe is expandings inceitis getting filled by another universe through black hole until potential of each becomes equal eventually leading to the death of universe.

REFERENCES

1. Publication: Rodolfo Gambini and Jorge Pullin, "Loop Quantization of the Schwarzschild Black Hole," Phys. Rev. Lett. 110, 211301 (2013); DOI: 10.1103/PhysRevLett.110.211301